alberta pork production handbook

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Alberta
AGRICULTURE
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INTRODUCTION AND MANAGEMENT OF NEW BOARS

Including:

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B. Introduction to Breeding
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Table 1: Service frequency for boars in natural service

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Most producers bring new boars into their herd regularly or do so at least periodically. It is well worth the time to properly introduce new boars. The payoffs will be a reduced chance of introducing new diseases and maximum production from the boars.

The basic rule of buying breeding stock still applies. That rule is: to buy only performance tested stock from herds of known health status which match one's own herd. The following procedures further reduce risks associated with bringing in new breeding stock. More information on selecting a source of breeding stock is available in fact sheet *Sources of Breeding Stock*, Agdex 440/38-2.

A. Segregation — Not Isolation

When a new boar is received, it should **not** be put directly in the main herd. The chance of introducing a new disease or different strain of an existing one is just too great. Even though the herd additions may come from so-called 'high health' or 'minimal disease'* herds, the additions are not disease free. The new boars should not be segregated from the receiving herd totally because that may inhibit their sexual desire. Rather, there should be limited contact with the new herd in a separate facility for the first month. It is important to see how the new boars will react with limited exposure to the receiving herd in the first 28 days. This 'segregation period' will also allow the boar to mature. Many boars are young (five to six months old) and they should be used sparingly until they are eight months old. Table 1 indicates recommended breeding frequencies.

For 'high health' herds, a separate building, or a 'segregation area' at least 30 m (100 ft) from the main building is needed. It should have several 2 x 3 m (5 x 10 ft) pens and a changing room, so clean boots and coveralls can be put on and taken off there. These boots and coveralls must only be worn in the isolation barn.

The 2 x 3 m pen will give a young boar adequate room to move about. Culled sows or gilts can then be housed next to him to stimulate his sexual appetite. Two or three young weaner pigs from the main herd should be housed with the new boar to serve as sentinels to signal disease problems. If the young boar is harboring any disease causing organism absent from the receiving herd, these young pigs will be the first to react. These quarantine procedures are effective in preventing introduction of haemophilus

* Minimal Disease and High Health are interchangeable terms. See fact sheet *Establishing and Maintaining New Swine Herds*, Agdex 440/667-4 for more details on this.

pneumonia, erysipelas and swine dysentery. These measures will **not**, however, prevent the entry of chronic diseases such as enzootic pneumonia and atrophic rhinitis, which the buyer can only avoid by purchasing stock from herds free of these diseases. If any animals in the segregation area become ill, a veterinarian should be consulted. The veterinarian's diagnosis will determine if the boar is suitable for addition to the main herd.

Even if you do not have a 'high health' herd, it is still recommended that you follow the above guidelines and maintain a separate facility for segregating new boars. An old grainery will suffice if the weather is not too severe. When a large investment has been made in a hog operation, it is a needless risk to put boars from an outside source immediately into contact with the main herd.

B. Introduction to Breeding

Once the new boar has completed the segregration period, he is ready to be moved into the main herd and to be used for breeding in a limited way. The boar should be placed into a pen that is exclusively his and given a few days to become accustomed to it. This will give him a feeling of security and confidence. Next, a young gilt that is in heat should be brought to the boar's pen and his actions observed (see C. Fertility Check).

If the boar is to be used in an outside or pen mating system, there are some precautions to observe. The basic procedure outlined above should still be followed. If a separate pen is not available, the boar should be put in a pen with 3 or 4 young gilts. He should **never** be put in a larger group (more than 6) of gilts, or worse yet, with mature sows. Sows are likely to rough the boar up and inhibit his desire to breed at least temporarily, and maybe permanently.

C. Fertility Check

The segregation period is a good time to re-examine the boar for normal physical development. Sound feet and legs are essential if a boar is to breed successfully for a few years. More information is available in the factsheet *Leg Weaknesses in Swine*, Agdex 440/07-1. One should observe and feel both testicles and the epididymis (the tube at the back of the testicles) for firmness and size. The testicles should be similar in size. Small testicles are related to low sperm production and should be avoided. On the other hand, boars with unusually large testicles are of concern because they may be diseased.

When it has been decided to use the boar for breeding a gilt, he should be observed on the following points:

Libido (sex drive)

The boar's usual behavior, the sounds he makes when near strange pigs or people, his aggressiveness and desire to mate should be observed. Most libido problems are environmentally caused rather than hormonal. In other words, most boars, given the right surroundings and incentive, will perform normally. Hormone treatment to stimulate sex drive and sperm production is usually useless. If the boar doesn't perform properly under the conditions mentioned in this factsheet, he should be replaced by another boar.

Ability to mount

The boar's ability to mount a gilt in heat should be checked. Common causes of failure to mount are poor health, lameness, lack of libido or poor mating environment such as slippery floors, fright or other distractions in the breeding pen.

Ability to mate

The boar's ability to erect his penis and insert it into the gilt's vulva should be observed. Boars have been observed on occasion to mount normally while the penis is in the prepucial pouch (a small pouch located in the body cavity just above the penis). One should check to see that the boar has entered the vulva properly, not the rectum of the gilt. Also, it is important to check to see that his penis is normal. Boars that have an infantile (limp) penis or a patent frenulum (tied penis) should be culled immediately. These conditions can be inherited and should not be allowed to multiply in the herd.

Defects or deficiencies in some of the above areas are more critical than others. If the boar won't mount or can't service a gilt, he is of no use and must be replaced. On the other hand, if feet and leg soundness or testicle size are doubtful, but the boar still 'gets the job done', one may want to take a chance on him if he has some other redeeming qualities. See table 2 for more details in this area.

D. Housing

Most boars are raised in total confinement. When moving a boar to the receiving farm, precautions should be taken against wind, heat or cold by transporting him in a covered vehicle with appropriate bedding. After the boar clears the segregation procedure, he is ready to join the main herd. He should be placed in a pen that is about 3 m x 3 m (10 x 10 ft), which gives him penline contact with

the gilts or young sows he is about to breed. This will assist in detecting heat. If the boar's pen is used for breeding, it should meet the following standards:

1. The floor should be 3m (10 ft) in diameter and footing should be good with no slats.
2. If it's impossible to keep the floor dry, use a light sprinkling of sand or sawdust to improve the footing.
3. The breeding pen should have no 90 degree corners that the gilt can back into. A separate octagonal breeding pen is the best way to overcome this problem. If only square pens are available, the corners should be blocked off. There should be no protruding nipples, troughs or other loose items in the pen. If the boar injures himself while mounting the female, his interest in breeding will diminish.

E. Feeding

The young boar should be fed about 2 to 2-1/2 kg (4 to 6 lb) of ration once a day. The dry sow ration in use should work well for this purpose. The ration should provide a crude protein content of about 14 per cent. Lower amounts of protein can cause reduced libido and a predisposition to disease. Do not overfeed boars because they will grow too rapidly and within six months will be too big to breed gilts. Boars should have access to fresh drinking water.

F. Breeding Management

When the new boar has passed the segregation period and fertility check, he is ready to get to work. Young boars should be used sparingly. Initially they must be used on gilts or young sows their own size. Hand mating systems are ideal. Here the producer can control the size and number of sows a new boar is bred to. The producer should bring the gilt to the boar's pen. A new boar should never be put into a group of gilts or sows.

If time or facilities do not allow hand mating, it is important that the boar is penned with sows his own size, preferably not more than 20. First, the boar should be put into a pen alone so he feels ownership towards the pen. After a few days, gilts can be added to the pen. In this situation, the boar will feel less threatened and will not have to fight for position. Consequently, he will be able to concentrate on breeding rather than establishing his social status.

If sows are run in large groups, a new young boar should not be added to a pen of sows with a large old boar. The young boar will probably get roughed up or even killed. Table 1 sets out the recommended maximum frequency of use for breeding for boars of various ages.

Table 2 summarizes factors influencing boar fertility, including a list of conditions associated with each factor, and comments as to what the conditions entail.

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Table 1. Maximum Breeding Service Frequency for Boars in Natural Service

Maximum Breeding Frequency			
	Junior Boars 6 - 8 Months	**9 Months to One Year**	**Senior Boars More than 1 Year**
Service per:			
Day	1	1	2
Week	2	4	6
Month	8	16	24

Table 2. Common Factors Influencing Boar Fertility

Factor	Sterile	Low Concep. Rate	Small Litter Size	Comments
Libido - low or lacking	X	X	X	Fails to mount female in heat, can be physical, (environmental), endocrine related or psychological; difficult to identify and correct. Cull the boar if he will not work after several times in varying situations.
Penile abnormalities - Patent frenulum or tagged penis - Limp infantile penis	X			Boar may mount and possess excellent semen quality but is not capable of entering the sow. Cull from herd.
Age of boar		X	X	Do not use boars before 7 months of age, and then use sparingly until a year old. Older boars (over 3 years) may have lower libido and semen quality.
Environmental temperature		X	X	Temperatures over 29°C (90°F) can reduce semen quality and produce up to 6 weeks of lowered fertility. Keep boars cool during summer months. Also, testicular cold shock caused by exposure to long periods of low temperature may result in temporary or permanent infertility. There are no external signs of the latter problem. Mid-February, semen evaluations by a qualified veterinarian can reduce non-productive sow days.
Nutrition		X	X	Provide a balanced 14% dry sow ration, feed between 2 and 3 kg (4.4 to 6.6 lb) of ration daily. The exact level depends on breeding load, condition of boar and climate. Do **not** let boar become fat.
Health	P	X	X	Health problems may temporarily affect libido or semen quality or both. High body temperature will decrease semen quality. Provide dry draft free sleeping quarters.
Fighting		X	X	Fighting with another boar may raise body temperature and decrease semen quality temporarily.
Genetics		P	P	Boars of certain breeds are known to be more aggressive than others, however there is tremendous variation within any breed. Some studies suggest that crossbred boars have greater efficiency of sperm production, greater sexual interest and are faster breeders than purebred boars.
Testicular size		X	X	In general, larger testicles result in higher total sperm count per ejaculate. Select boars with adequate testicular development for their age.
Social behavior		X	X	Some boars are more timid than others, which can be related to social environment during the growing phase. Boars raised individually (i.e. without group contact) or housed in total darkness often lack sex drive.

X = means usually associated
P = Possibly